

Effects of Wi-Fi Radiation on Germination and Growth of Broccoli, Pea, Red Clover and Garden Cress Seedlings: A Partial Replication Study

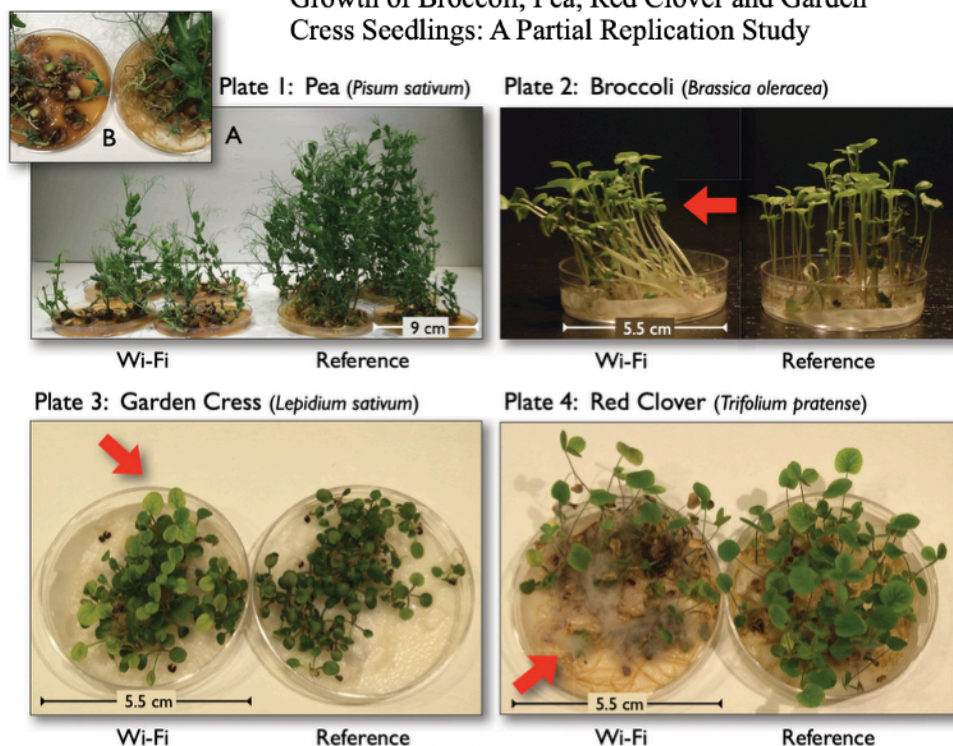


Plate 1: Peas after 30 days exposure to microwave radiation from a Wi-Fi router on the left and to no microwave radiation (reference) on the right. A. Side view. B. Aerial view of root system.

Plate 2: Broccoli after 28 days exposure to microwave radiation from a Wi-Fi router on the left and to no microwave radiation (reference) on the right. Arrow shows plants growing away from Wi-Fi router.

Plate 3: Garden cress after 28 days exposure to microwave radiation from a Wi-Fi router on the left and to no microwave radiation (reference) on the right. Arrow points to larger leaves and signs of chlorosis.

Plate 4: Red clover after 28 days exposure to microwave radiation from a Wi-Fi router on the left and to no microwave radiation (reference) on the right. Arrow points to fungal growth in seedlings exposed to Wi-Fi.

effects observed. This Wi-Fi router emits a carrier frequency of 2.45 GHz, which is within the microwave part of the electromagnetic spectrum (300 MHz to 300 GHz).

Although microwave exposure in the Danish study was not provided, the intensity of microwave radiation is likely to be higher than in our study for a number of reasons. The students exposed their plants to two Wi-Fi routers rather than one. School routers tend to be more powerful than models used in most homes. Also, the school routers were uploading and downloading information during school hours whereas in our study the Wi-Fi router was not being used and hence plants were exposed only to the beacon signal. The

difference in results between the Danish study and ours could be due to different intensities of microwave radiation.

Cammaerts and Johansson [6] also conducted a partial replication of the Danish study. Instead of Wi-Fi radiation at 2.45 GHz, they placed cress seeds in moistened compost 200 meters from two communication towers emitting 900 and/or 1800 MHz. The low radiation seeds ($2-3 \mu\text{Wm}^{-2}$ $\sim 30 \text{ mVm}^{-1}$) began to germinate within 4 days of exposure, while the high radiation seeds ($70-100 \mu\text{Wm}^{-2}$ $\sim 175 \text{ mVm}^{-1}$) failed to germinate within 10 days of exposure. When these trays were removed from the radiation they germinated normally. According to the authors, radiation was the most likely cause of

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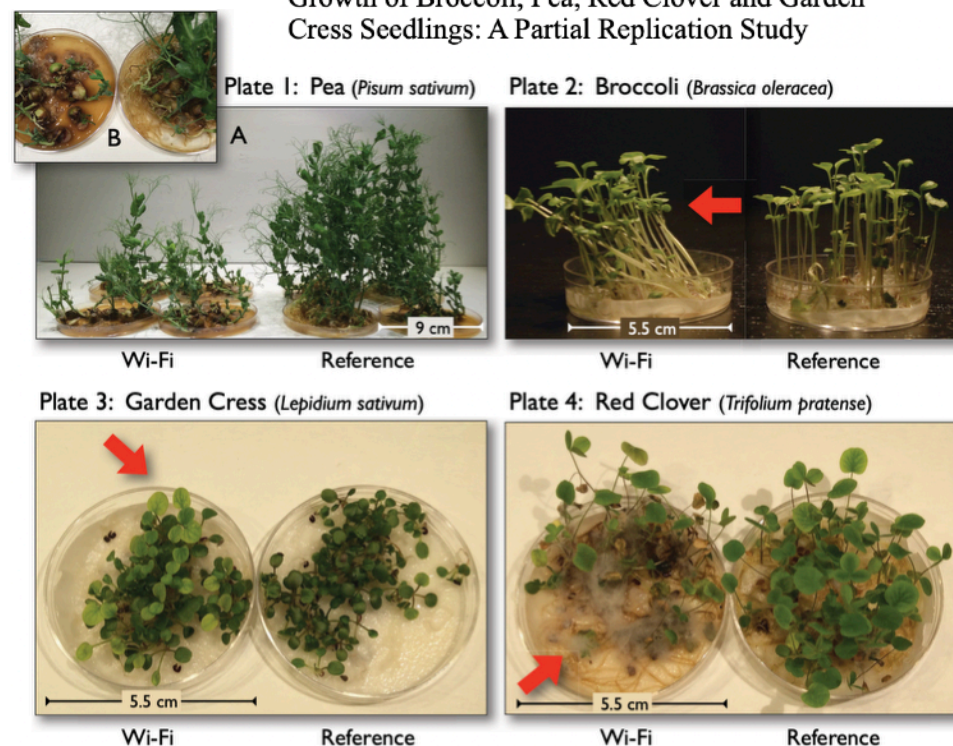


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ALSO SEE:

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